

Algebra 2 Bellwork Thursday, June 4, 2015

1. A world-wide company took a poll of 1600 employees and found that 1440 were happy with their current position.

a. Find the sample proportion as a percent rounded to the nearest tenth.

b. Find the margin of error to the nearest tenth of a percent.

c. Find the range of values that most likely contains the population proportion for the percent of employees that are happy with their current position.

d. If the company has a total of 58,000 employees find the interval for the actual number of employees that are happy with their current position.

2. A poll of registered voters has a margin of error of $\pm 2\%$. Find the sample size to the nearest whole number.

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ANSWERS

1. A world-wide company took a poll of 1600 employees and found that 1440 were happy with their current position.

a. Find the sample proportion as a percent rounded to the nearest tenth.

$$\frac{1440}{1600} \times 100 = 90\%$$

b. Find the margin of error to the nearest tenth of a percent.

$$\pm \frac{1}{\sqrt{1600}} \times 100 = \pm 2.5\%$$

c. Find the range of values that most likely contains the population proportion for the percent of employees that are happy with their current position.

$$90 \pm 2.5 = 87.5\% \text{ to } 92.5\%$$

d. If the company has a total of 58,000 employees find the interval for the actual number of employees that are happy with their current position.

$$58,000 (.875) \text{ to } 58,000 (.925)$$

$$50,750 \text{ to } 53,650 \text{ employees}$$

2. A poll of registered voters has a margin of error of $\pm 2\%$. Find the sample size to the nearest whole number.

$$\left(\frac{1}{\sqrt{n}}\right)^2 = (.02)^2$$

$$\frac{1}{n} = \frac{(.02)^2}{1} \Rightarrow \text{cross mult}$$

$$n = 2500$$

sample size